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RECREATIONAL AREA TRENDS IN THE RURAL-URBAN FRINGE: CASE STUDY OF KÓRNIK *GMINA* (COMMUNE)

1. INTRODUCTION

The growing affluence of society, brought on by the economic and social development in Poland since the early 90s as a result of the systemic transformation, has been reflected in numerous aspects of life. The process manifests itself in such ways as an increased migration of city inhabitants to the rural-urban fringe, driven by a need to improve their living conditions. As a consequence, intense growth of residential development is observed in areas adjacent to the city. Rural-urban fringe housing estates usually function as higher quality 'dormitory districts' as their inhabitants spend most of their time in the central parts of the city: at work, at school, in offices, at cultural and educational institutions and in shops, remaining in principle (paradoxically) under the influence of the fast-paced urban life accompanied by stress, crowds, noise and air pollution. Given this, the need to recover physically and mentally by means of relaxation and recreation becomes extremely important for those from central urban and rural-urban fringe areas alike.

Physical and mental strength are mainly recovered during time free from work, study and household duties. All activities meant to fill in (consume) that time take place in what WŁODARCZYK (2009) calls the 'free-time sphere' which he divides into tourism and recreation. This conceptual division is based on free time behaviour, thus the tourism sphere is of a 'festive nature', whereas the recreational usually pertains to daily activities.

The considerable importance of the rural-urban fringe as a sphere of everyday activity related to rest and recreation stems from its offer of many areas with a high natural interest – areas with plenty of surface water and forest – most attractive for recreation (IWICKI 2002), especially when compared to dense urban development. The use of open spaces in the rural-urban fringe as recreational areas is further encouraged by their short distance from places of residence which eliminates the need to find accommodation and reduces the cost and time of travel.

Therefore, the recreational areas of the rural-urban fringe will be most suitable for satisfying the daily and weekend needs of those living in both the city and the rural-urban fringe itself.

The rural-urban fringe, and in particular areas of a high natural value, promise their future inhabitants a higher quality of living and have been targeted by private investors and developers. Hence, on one hand there is the presence of valuable areas suitable for tourism and recreation, while on the other, simultaneously and with potential conflict, considerable pressure from investors to develop that land. This has provided the grounds for this study, namely the analysis of the impact that rural-urban fringe processes exert on recreational areas.

A hypothesis was accepted at the start that the growing demand for investment land in the rural-urban fringe poses the risk of the shrinkage of areas attractive for recreational purposes. Apart from examinng this hypothesis, the study also indicates the problem of recreational area availability due to the location of residential developments beside sites attractive for their landscape. Examples of spatial planning decisions with a considerable impact on recreational areas are also presented.

2. STUDY AREA

The areas of interest to this study were *gminas* located in the rural-urban fringe of Poznań. The particular *gmina* to be selected for analysis should, on the one hand, be abundant in natural assets (forest areas and lakes) most suitable for everyday and weekend recreation, and on the other be subject to strong investment pressure. These criteria are met in the *gmina* of Kórnik where nearly half of the area is under some kind of natural environment protection. The southwestern part of the *gmina* features part of the Rogalin Landscape Park, and in the central and southern parts the protected landscape area of the Zaniemyśl-Kórnik lakes drainage basin is located. There are also *Natura 2000* areas within the *gmina*, and all forests are classified as protected. According to the Recreation Study for the Wielkopolska *Województwo* (2004), the Kórnik-Zaniemyśl District is one of two (with the Zielonka Forest) considered the most attractive in respect to recreation in those areas surrounding Poznań. The *gmina* of Kórnik is also one of those in the *powiat* of Poznań (together with Dopiewo, Komorniki, Rokietnica and Suchy Las) with the most rapid population increase over the past 10 years (regional data bank of the Central Statistical Office – GUS www.stat.gov.pl). In 2009 Kórnik *gmina* the inhabitants had increased by nearly 33% since 2000. The most intensive development was observed in villages situated close to the boundaries of Poznań, namely in Kamionki, Borówiec, Koninko and Szczytniki. Within Kamionki alone the developed area increased by 600% between 1998 and 2007 (PONIŻY 2008).

3. STUDY PROCEDURE

3.1. CHANGES IN THE SIZE OF RECREATIONAL AREAS

In order to verify the hypothesis advanced at the beginning of this paper, a comparative analysis of land use in 2004 and 2009 was made. The analysis employed data from the Digital Sozological (Environmental Impact) Map of Poland (Central Office for Geodesy and Cartography – GUGiK 2004) and an orthophotomap available at www.geoportal.gov.pl (data from 2006), which was updated with Google Earth satellite images (data from 2007-9). The trends in land use are given in table 1.

Land use change is dominated by an increase in the area under development; over the past five years estimated at over 110%. It was found that most of the new development was on land previously used for farming (90.2% of the area developed), 2.7% (0.197 km²) as forest, while 7.2% (0.525 km²) as 'grassland'. Apart from this, however, no other instances of valuable natural areas being used for other purposes were noted. A pond of over 9 ha has been formed from an excavation on a former natural aggregate extraction site near Żerniki, but nearby post-extraction areas hinder its recreational use.

T a b l e 1. Land use changes in the *gmina* of Kórnik between 2004 and 2009

Land use form	Surface area in 2004 (km²)	Change in surface area in 2004-9		Surface area in 2009 (km²)
		km²	%	
Developed areas	6.626	+7.340	+110.787	13.966
Forests in total	50.832	–0.197	–0.388	50.635
Arable land in total	108.376	–6.713	–6.194	101.663
Grassland and pasture in total	12.593	–0.525	–4.165	12.069
Surface water	4.408	+0.094	+2.143	4.502
Cultivated 'green' areas	2.609	0	0	2.609
Wasteland	0.119	0	0	0.119
Total	185.562	x	x	185.562

S o u r c e: Own research based on the Digital Sozological Map of Poland (Central Office for Geodesy and Cartography 2004), orthophotomap (www.geoportal.gov.pl, access date 15.04. 2010), Google Earth satellite images (access date 16.04.2010).

The above analyses show that the hypothesis presented is incorrect as the implications of investment pressure in the rural-urban fringe only slightly translates into a decrease in the size of attractive recreation and leisure areas.

3.2. INVESTMENT PRESSURE AND RECREATIONAL AREA AVAILABILITY

Valuable natural areas, in particular forests, pull development into their surroundings because they are attractive not only for recreation but also settlement. Areas with a valuable environment and landscape act like a magnet, and estate agencies emphasise the vicinity of forests or lakes as a great asset for increasing the standard of living.

In relation to this, areas developed both before 2004 and from 2004-9 were analysed with regard to the vicinity of forests. The increase in the contact boundary length reached 509% (with an increase in surface area of just below 111%). In 2004 the contact boundary length between developed and forest areas was 4.71 km, which with a developed area of 6.63 km² gives 0.71 km/ km². In 2009 the areas developed after 2004 have a boundary of 23.97 km which with a developed area of 7.34 km² gives 3.27 km/ km².

a b

Fig. 1. Open space with a line of forest on the horizon (a); residential development interfering with open areas (b)
Photo L. Poniży

3.3. PLANNING DECISIONS AND RECREATIONAL ACCESSIBILITY – SELECTED EXAMPLES

The 'informative' potential of landscape (capability of providing a viewer with desired information – Gayer 1983, further WOJCIECHOWSKI 1993) is significant for leisure and recreational forms only in that it should invoke associations giving the impression of being in a healthy and unpolluted environment. For many of those who live in highly urbanised countries this would mean associations linked with the naturalness of landscape (WOJCIECHOWSKI 1993), a naturalness lost as a result of building on open spaces, in particular those of neighbouring forest areas. New housing development 'appropriates' the landscape, making it monotonous and uniform (Fig. 1).

Development in open spaces restricts access to recreational areas. This restriction has a twofold character. First of all, it is a restriction of physical access, i.e. a restriction on the actual possibility of accessing forests as the most attractive areas for recreation and leisure. Secondly, it is a restriction of visual access, i.e. depriving the viewer of the possibility of aesthetic visual reception through stripping landscape of its natural qualities. The perception potential of the natural environment and particularly its landscape-related features, together with the size and the quality of ecologically active areas, constitute a significant value to the viewer. In the opinion of Pietrzak the perception of the aesthetics of landscape influences the activity performed within it (in particular tourism and recreation) and the aesthetic criteria are considered as important premises for landscape management (in particular recreational landscape).

Restricting both physical and visual access is a consequence of planning decisions made by local government. An example of a local spatial management plan for part of the village of Koninko is given below whose implementation is undoubtedly going to influence the recreational accessibility of the pond and the surrounding green areas. The pond, with a surface area of 5 ha and formed as a result of an excavation on a natural aggregate extraction site, is surrounded by vegetation – poplars, birches and willow thickets (Fig. 2) – and currently used by the local population for recreational purposes (fishing, sunbathing, walking, cycling). The western part of the area included in the plan is bordered by a *powiat* road which overlooks the pond and the green area around.

Implementing the local spatial management plan will cause the pond to diminish compared to its current size and will entail removing a considerable part of the vegetation. The plan provides for locating single-family and terraced housing as well as commercial buildings along 4/5^{ths} of the pond's shoreline which will considerably restrict physical accessibility. Besides, the visual accessibility will also be restricted, particularly from the south, where terraced housing is planned. The view over the pond from the *powiat* road as well as local roads and paths will be seriously spoiled by housing development. The pond and the green areas surrounding it will lose the character of a generally available public space, and enclosing the pond within a settlement can restrict its leisure and recreational use.

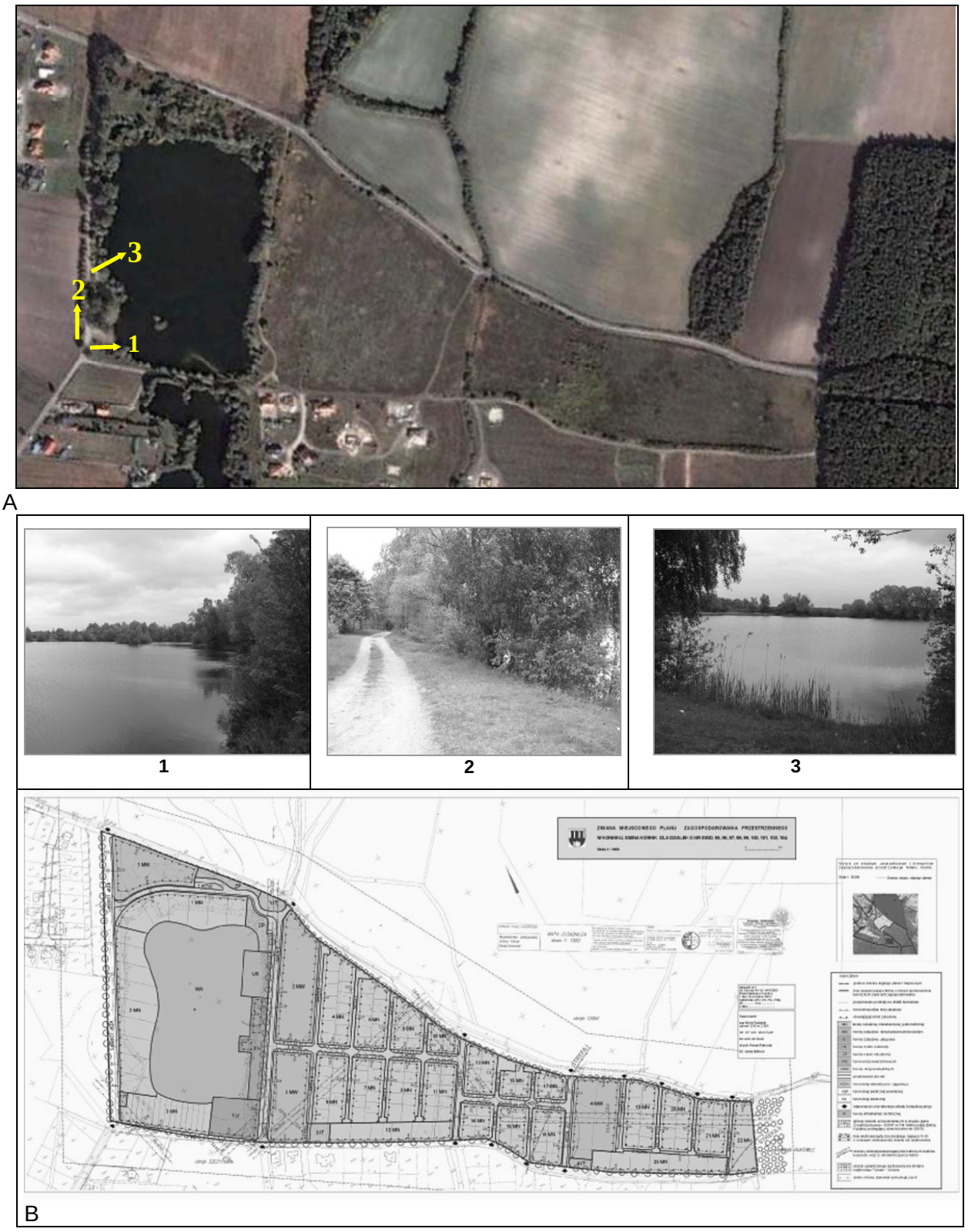

Fig. 2. Area of the local spatial development plan, Koninko (Kórnik) – current status (A, 1, 2, 3); proposed amendments (B)
S o u r c e: Google Earth, Kórnik Council Resolution no. XLIV0441/2009 of 16th September 2009, photos 1, 2, 3 – L. Poniży

Another example concerns the issue of an emergency aircraft load drop zone for the military airfield in Krzesiny planned for the *gmina* of Kórnik. All military airfields require such a zone where pilots can eject or drop a redundant load to facilitate landing in emergency situations. The armed forces applied for such a zone for F-16 aircrafts to the Marshal of the province in 2009 and proposed an uninhabited area near the boundaries of the *gminas* of Mosina and Kórnik (a forest complex in the western part of the *gmina*). The zone needs to be taken into account in spatial management plans for the *województwo* and the local plans for the *gminas*.

It is very unlikely that the zone will officially become a no-entry area but still a decrease in the recreational use of the forest area in question should be expected for psychological reasons. The fear of the possible effects of load drops could be an important factor discouraging recreation in the forest complex within the load drop zone, in particular during training flights of jet-fighters. The decrease in the use of the recreational areas is therefore going to be periodic – during the flights (almost every day from 9.00 to 14.00) for as long as the airfield in Krzesiny operates. Closing the airfield in the area where it is currently located would most probably entail removing the zone.

4. SUMMARY AND CONCLUSIONS

As a result of the analysis conducted, the following trends of the impact on recreational areas were identified and given in the figure below (fig. 3).

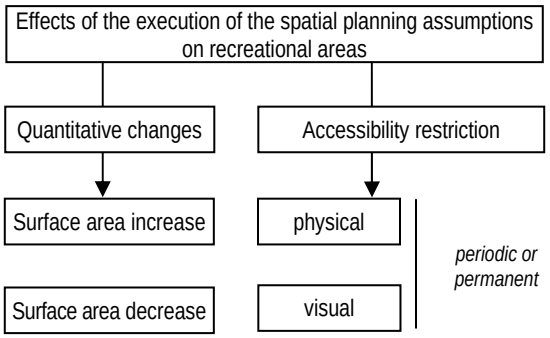

Fig. 3. Changes within the recreational areas brought by the execution of spatial planning assumptions
Source: author's research

In the case of the *gmina* of Kórnik, no changes in the size of areas attractive for recreation and leisure were noted in the analysed period. However, some changes regarding recreational areas were observed. These consisted of accessibility restrictions both physical, the actual possibility to access recreational areas, and visual. The restrictions can have a permanent character such as when development is constructed in the immediate vicinity of forests and surface water, or periodic, as it is in the case of the emergency load drop zone.

Intensive rural-urban fringe housing development, increasingly common near forests and surface water, will make those areas accessible only by the roads and paths crossing the settlements.

As MARKOWSKI & DRZAZGA (2009) state, development, often sprawling chaotically, gradually destroys the landscape and the natural value which originally determined the investment location. Hence, the initial attractiveness of the area disappears once the open space is divided into plots and turned into another housing estate.

Therefore it is suggested that the land neighbouring valuable natural areas should be protected against development and remain in agricultural use (arable land, grassland). Those areas would act as a kind of a buffer to preserve open spaces, create views over valuable landscapes and improve the physical and visual accessibility of areas attractive for recreation and leisure.

The above considerations should be taken into account in the documents which create land use policy in *gminas*. As was observed by PAWLUSIŃSKI (2005), special attention needs to be paid to the protection of landscape assets, including maintaining the spatial structure and landscape aesthetics. The activity of local government should encompass not only actions aimed at keeping order but it should also consider creating regulations which would specify the type and size of development, areas of dense development etc.

Spatial planning should have a stronger influence on the management of recreational space as incorrect planning decisions result in 'landscape appropriation' through introducing chaotic development particularly in the vicinity of exceptionally aesthetic areas. The process, whose implications are very hard or even impossible to correct, is going to continue. According to KOZŁOWSKI (2008) the reasons for this should be sought in Polish law which lacks landscape protection regulations. Landscape protection was not included in the act on spatial planning and management (Legal digest 2003, 155, item 1298), and the lack of a definition of a landscape and rules for its protection exempts spatial planning institutions from classifying landscape types and defining protection principles.

According to GIEDYCH (2008) the management principles for the natural landscape are ignored in planning documents because of low awareness in those local governments which have a statutory right and responsibility to manage the landscape and its

functioning. It must also be noted that difficulties linked with implementing management principles in planning practice in such areas add to the problem.

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